WATERLINES

News affecting the management and use of Indiana's water resources

DIVISION OF WATER
INDIANA DEPARTMENT OF NATURAL RESOURCES
FALL - WINTER 2002

NOW AVAILABLE: GENERAL GUIDELINES FOR THE HYDROLOGIC-HYDRAULIC ASSESSMENT OF FLOODPLAINS

David B. Knipe, PE, CFM

General Guidelines for the Hydrologic-Hydraulic Assessment of Floodplains in Indiana was created to assist the floodplain management community in establishing base flood elevations (BFEs) and floodway limits and in evaluating projects in accordance with the Indiana Flood Control Act and the National Flood Insurance Program. Members of the floodplain community and, therefore, the intended audience of these guidelines includes individual property owners, developers, engineers, surveyors, elected and appointed officials and interested citizens.

The Flood Control Act states that "the director shall issue a permit only if … the applicant has clearly proven that the structure, obstruction, deposit, or excavation will not … adversely affect the efficiency of or unduly restrict capacity of the floodway … the director shall consider cumulative effects".

The guidelines were authored by a team of water resource professionals representing the Indiana Department of Natural Resources (IDNR) – Division of Water and engineering consulting firms active in the area of water resources in the state of Indiana. The team met regularly over the last two years to create the guidelines. The current version of these guidelines is available at the IDNR Division of Water website (http://www.in.gov/dnr/water/surface_water/hydro_hydraulic/index.html)

The guidelines are split into 10 chapters:

- Chapter 1 reviews federal and state floodplain acts and codes, defines some key terms and expands on the purpose of the guidelines.

- Chapter 2 details the process of obtaining BFEs and floodway limits for projects consisting of a single lot and/or structure. In these cases, the IDNR may provide or calculate the BFE.

- Chapter 3 provides an overview of detailed floodplain analyses, including discussions of developing models for Floodplain Analysis and

Also in this issue

Regulatory Assessment (FARA) determinations, for Construction in a Floodway permit applications, and for Letters of Map Revision. Also discussed in this chapter are details regarding Flood Control Projects and Levees.

• Chapter 4 offers suggestions for selecting or creating a map suitable for plotting floodplain and floodway limits.

• Chapter 5 prescribes surveying standards and suggests surveying methods likely to lead to determination of BFEs and plotting of floodplain and floodway limits acceptable to the IDNR.

• Chapter 6 provides guidance on potential model sources and offers suggestions on how to evaluate the suitability of a model. In conjunction with the publication of these guidelines, the Division of Water has compiled a list of models that are available for downloading from our website. See our website for details.

• Chapter 7 describes the IDNR's methodologies for determining peak flood flow discharges. Described are three options for determining peak discharges acceptable to IDNR.

• Chapter 8 offers suggestions for more effectively creating and using a HEC-RAS model. HEC-RAS, a widely used hydraulic model developed by the U.S. Army Corps of Engineers, is preferred by the IDNR for floodplain analyses.

• Chapter 9 recognizes that other hydraulic models may occasionally be used. Accordingly, this chapter discusses issues that should be considered when using such models.

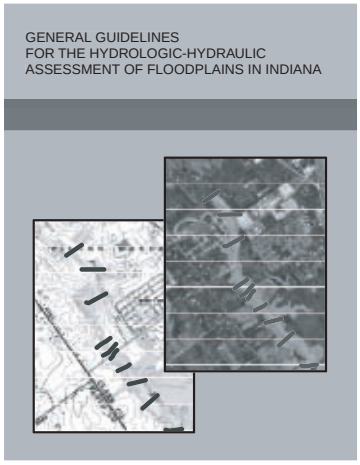
• Chapter 10 provides suggestions on how to effectively present to the IDNR the modeling that supports a floodplain hydrologic-hydraulic assessment.

There are a number of changes to past practice with regard to submitting models for review with IDNR. These changes include:

• IDNR will require inclusion of a properly completed Hydraulic Modeling Checklist with all submittals of detailed floodplain analyses.

• With the checklist, IDNR will require a Project Evaluation Table, which will assist IDNR in the review of projects with respect to our statutory requirement to evaluate the cumulative effects of all projects along a waterway.

• IDNR will only review models submitted for FARA determinations two times. If it is determined that the initial submittal is unacceptable, the IDNR will provide the requester with a written description of deficiencies. The Department will allow one additional submittal to correct errors and/or rectify deficiencies. If the second submittal is unacceptable, the requestor and the local floodplain management official will be notified in writing that the modeling is still deficient and that IDNR will not review the material again. It will then be the requestor's responsibility to find some other professional to submit modeling for the project site that is consistent with the new guidelines.



General Guidelines for the Hydrologic-Hydraulic Assessment of Floodplains in Indiana is a living document whose content will be continuously refined in response to improvements in the art and science of floodplain analyses as the IDNR interacts with the floodplain community. In the spirit of continuous improvement, the IDNR welcomes questions and suggestions.

ADVANTAGES AND DISADVANTATES OF FLOODPRONE LAND ACQUISITION

Acquisition of floodprone land is generally looked at as a "good thing" especially by those involved in floodplain management. Some communities have used acquisition to transform flood-blighted areas into more appropriate uses such as parks, greenways, and trails on which flooding will not have detrimental effects. Like most things, however, there are advantages and disadvantages to acquisition. Listed below are some things for a community to consider.

Tangible Advantages

- Eliminates flood insurance costs
- Eliminates flood proofing costs
- Provides income from leasing acquired property
- Often less expensive than a structural solution
- Provides Community Rating System (CRS) benefits
- Reduces emergency and disaster assistance costs
- Avoids possible litigation costs

Intangible Advantages

- Eliminates residual flood risks beyond the design of a structural improvement
- Maintains overbank storage and attenuates downstream flood peaks
- Eliminates resident's fear of living in a flood zone
- Provides passive and active recreational opportunities
- Enhances water quality and promotes aquifer recharge
- Preserves wildlife habitat and biodiversity
- Provides open space benefits

Tangible Disadvantages

- Requires funding source to purchase property
- Requires expenditure of funds that could be used for structural projects
- Removes property from tax rolls
- Requires on-going administrative expenditures
- Requires funding for maintenance and property safeguarding
- Requires staff time to evaluate properties for acquisition
- Increases liability exposure on acquired properties

Intangible Disadvantages

- Allows less opportunity to leverage state and federal matching funds
- Provides lower perceived political benefit compared to structural improvements

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- - Public Safety/Hydrologic Factor
- - Natural Resource/ Amenity Factor
- - Administrative Cost Factor
- - Other Factor

-Information provided by FEMA

INDIANA'S NEWEST CFMs

The Certified Floodplain Manager (CFM) exam was offered two times in Indiana in 2002. First at the Indiana Association for Floodplain and Stormwater Management (INAFSM) conference in September and then later in November at Evansville. Four individuals from Indiana earned the designation of CFM this year. Stephen Fuchs, Henry Nodarse, Daryl Helfert, and Ronald London passed the exam and became CFMs. Congratulations to all of you!

A CFM has confidence in his/her level of knowledge of floodplain management. This designation means that a national program has recognized an individual's professional capabilities. For a complete listing of current Indiana CFMs, go to the INAFSM website at www.inafsm.org.

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) QUICK REFERENCE GUIDE

There are four types of communities in the NFIP "universe". They are shown below with some of their NFIP characteristics and actions necessary to be taken by local building officials, federally regulated or insured lending institutions, and insurance agents. It is a summary and is not meant to be inclusive. Contact the Floodplain Management Section at 317-232-4160 or 1-877-928-3755 (toll free) for more information.

Status 1: Mapped and Participating

Community Actions: Require permits for new development in Special Flood Hazard Areas; require new development, including substantial improvements and repairs to substantially damaged structures to comply with floodplain management regulations; base (known as "100-year" or "1% chance") flood used as basis for rules.
Flood Insurance: Available throughout the community on all buildings and their contents, whether inside or outside the floodplain area; subsidized rates apply to pre-FIRM buildings and actuarial rates apply to post-FIRM buildings.
Lender Actions: Require flood insurance on all loans secured by improved real estate located or to be located in the Special Flood Hazard Area and give required notice about flood hazards and Federal disaster assistance availability.

Status 2: Mapped and Not Participating

Community Actions: Local floodplain permits not required but state and federal permits still apply in floodplain areas; Special Flood Hazard Area map published.
Flood Insurance: Not available.
Lenders Actions: Federally assisted loans are prohibited in Special Flood Hazard Area but conventional loans are permitted at lender's risk. Give notice about flood hazards and unavailability of federal disaster assistance for flood disasters.

Status 3: Not Mapped and Participating

Community Actions: Regulates new building to avoid flood damage to the extent flood hazards are known to local officials; only minimal regulations apply.
Flood Insurance: Available throughout the community on all buildings and their contents.
Lenders Actions: No specific requirements; flood insurance is available but not required for any loan.

Status 4: Not Mapped and Not Participating

Community Actions: None required.
Flood Insurance: Not available.
Lenders Actions: No specific requirements; flood insurance is not available but not required for any loan. ≈

-Information provided by FEMA

CRAWLSPACE CONSTRUCTION REMINDERS FOR BUILDINGS LOCATION IN SPECIAL FLOOD HAZARD AREAS

Gregory A. Main, CFM

Crawlspaces are a commonly used method of elevating buildings here in Indiana. This includes buildings in Special Flood Hazard Areas (SFHAs). A problem arises when local floodplain administrators focus only on the elevation of new or substantially improved buildings in the SFHA, without considering other provisions of their ordinances also required by the National Flood Insurance Program (NFIP) regulations such as flood vents and utility protection.

Local floodplain administrators need to ensure that if fill is placed around the foundation walls of a crawlspace, that the fill is graded so that the grade inside the enclosed area is equal to or higher than the adjacent grade outside the building. This must be done on at least one side of the building. Failure to ensure this will result in higher flood insurance premium rates for the structure and a compliance issue for the community.

While this requirement has always been part of the NFIP regulations, earlier FEMA Elevation Certificates, did not specifically require that the interior elevations be reported. However, on FEMA's revised elevation certificate form, this has been clarified and surveyors are now required to report the interior elevation of a crawlspace.

As with any elevated structure, permanent flood vents must be in place to prevent damage from the hydrostatic pressure created by floodwaters. Keep in mind that there must be at least two permanent flood vents and that the total open area must meet the requirements of the floodplain ordinance. The bottom of each vent must be within one foot of grade to work effectively and to be compliant with NFIP regulations.

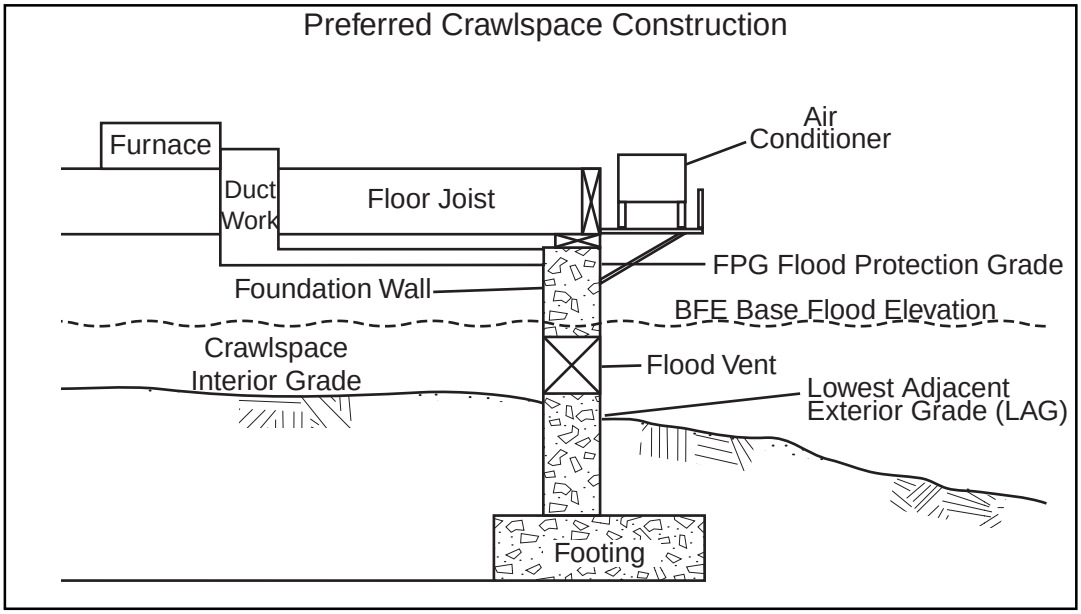
Another crawlspace construction reminder is that NFIP regulations require that buildings be constructed with materials resistant to flood damage below the flood protection elevation. This includes the building's electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities. Flood insurance claims have shown that the Federal Emergency Management Agency has paid a lot of money for damage to air conditioners, furnaces, ductwork, and insulation that were flooded, even though the building's lowest floor was high enough. In addition, mold, mildew and fungus accumulating in flood damaged air passageways often can lead to serious health issues for residents.

What the Floodplain Administrator can do

• Review your ordinance, current permit application, and inspection procedures to determine the best way to ensure that these requirements are being met. It may require procedural changes such as additional information on your community's permit application form, additional plans provided by an applicant, an addition to a field inspection check list, and/or photographs for the record at the time of the final inspection.

• Discuss the matter with your local builders, surveyors, and architects to educate them on NFIP requirements.

In short, protecting a building from flood damage means more than elevating the lowest floor above the flood protection elevation. Local floodplain administrators need to remember to check and ensure that crawlspace construction in their community is complying with NFIP requirements. If you have questions on NFIP regulations for crawlspaces, contact the Division of Water's Floodplain Management Section toll free at 1-877-928-3755.



CONFERNCE CORNER

ASFPM CONFERENCE

The Association of State Floodplain Managers (ASFPM) 2003 Annual Conference will be held this year in St. Louis, Missouri, May 11-16. This is the only national technical conference on floodplain management in the United States. The theme "Lessons Learned: Gateway to Flood Mitigation" will demonstrate how problems, issues and solutions have been addressed in the ten years since the Great Midwest Floods of 1993.

Mapping issues will be addressed throughout the week. No Adverse Impact (NAI) techniques, methods and tools will be highlighted in numerous presentations. Detailed information about the upcoming conference is posted on the ASFPM website at www.floods.org. ≈

COURT BACKS COUPLE, FINDS FLOOD INSURANCE AGENT NEGLIGENT

Editor's Note: The following is a reprint of an article from the San Antonio, Texas ***Express News*** *of May 3, 2002. This article gives an example of what can go wrong when incorrect information is dispensed. The best way to avoid situations such as this one is knowledge.*

All professionals who provide floodplain related information are encouraged to take advantage of the information and training on flood insurance and floodplain issues that is available to them. Citizens rely on these professionals for accurate information. The Floodplain Management Section can help direct interested professionals to training opportunities and applicable information. Please call at 317-232-4160 or toll free at 877-928-3755. Flood insurance is available in a National Flood Insurance Program (NFIP) participating community regardless of whether the property is in a "floodplain". Remember, flooding can happen anywhere. Water can't see the lines on the map.

A Guadalupe County couple suing State Farm Fire & Casualty Co. won a decision this week when the 4th Court of Appeals said a lower court should not have dismissed their claim that an agent was negligent when he discouraged them from buying flood insurance.

After their neighbors suffered severe flood damage in June 1997, Roy and Billie Nast tried to buy flood insurance from Dan Clark, the State Farm agent they'd relied on for 18 years.

Their suit alleges that Clark told them they were not eligible for Federal Emergency Management Agency flood insurance, and any alternative would cost them $2,500 a year. Roy Nast questioned why his neighbors were getting policies for $400.

According to the lawsuit, the agent said he had heard that a "shyster" was selling those policies and the purchasers likely wouldn't collect in the event of damages.

The Nast's house flooded in October 1998. When the Nasts applied for disaster relief, FEMA required them to show proof that they had attempted to buy insurance. The suit says that the Nasts asked Clark for a letter to that effect, but he gave them a letter back-dated to 1997 that covered up his alleged misrepresentation.

Clark told them that they were not eligible, Justice Karen Angelini wrote in her opinion. *The Nasts trusted Clark because he had been their agent for 18 years. Because of Clark's misrepresentations, the Nasts did not make any further attempts to acquire flood insurance.*

Justices Catherine Stone and Sarah B. Duncan concurred and reversed the district judge's ruling on the ground of misrepresentation and negligence under the Deceptive Trade Practices Act. ≈

PRECIPITATION REPORT FOR JULY THROUGH DECEMBER 2002

Unlike the spring, July began a trend of drier than normal conditions for most places in Indiana. Northern Indiana was drier than normal with precipitation averaging 1.22 inches below normal. The most significant rain event was in central Hancock County when rain of 4 to 6 inches fell in about 3 hours.

Precipitation during the month of August was also quite variable. Northern Indiana remained drier than normal. Evansville posted the 9th driest August on record. While many areas received less than 50% of normal monthly rainfall, portions of west central Indiana received over 300% of normal. Rain of 4 to more than 10 inches fell in about 6 hours in Warren, Fountain, Northern Vermillion, southern Tippecanoe and northern Montgomery counties.

In September, northern Indiana was again rather dry with below normal precipitation. The month was the 3rd warmest and 7th driest at South Bend. Areas in central and southern Indiana received 2 to nearly 6 inches of rain on the 19th and 20th. The heaviest rain occurred along and just west of the White River from the Vincennes area to just west of Indianapolis.

During October, northern Indiana again was below normal on precipitation. Much of the rain during October fell after the 24th. November continued the trend of below normal precipitation. The heaviest rainfall occurred in Indianapolis on the 10th when 1.54 inches fell and was a record for that day.

December began on a very cold note. On the 4th and 5th, heavy snow fell across the southern third of Indiana. Snowfall of 4 to 5 inches fell across south of a line from Sullivan through Bloomington to Brookville. A snowband of 5 to 6 inches was about 10 to 15 miles wide and extended from Vincennes through Bedford and Seymour to North Vernon. Washington County and Harrison County reported depths of 6 to 7 inches of snow. The biggest rain of the month occurred the evening of the 18th and early morning of the 19th with rainfall ranging from one half inch in central Indiana to just over an inch in the south.

Many folks had their dreams of a "White Christmas" come true as snow that began on Christmas Eve covered nearly all the state with a thick blanket of snow. Snowfall amounts from 6 inches to 11 were common throughout, including Fort Wayne's 10th heaviest 24-hour snowfall on record, 8.2 inches.

KEY: ACTUAL (INCHES) / NORMAL (INCHES)

Locations	July	August	September	October	November	December	Totals 2002
CHICAGO	2.68	8.06	1.72	1.60	1.04	1.93	33.92
IL	3.51	4.62	3.27	2.71	1.97	2.43	35.23
SOUTH BEND	2.47	2.31	1.16	1.43	1.91	1.80	28.84
IN	3.73	3.98	3.79	3.27	3.39	3.09	39.57
FORT WAYNE	2.40	2.79	2.54	1.58	2.27	1.61	33.23
IN	3.58	3.60	2.81	2.63	2.98	2.77	36.42
INDIANAPOLIS	1.65	1.42	3.70	2.64	2.89	3.02	39.73
IN	4.42	3.82	2.88	2.76	3.61	3.03	40.95
EVANSVILLE	4.33	0.63	5.22	3.74	2.97	5.65	50.31
IN	3.75	3.14	2.99	2.78	4.18	3.54	44.27
LOUISVILLE	1.21	0.68	7.81	4.65	2.40	7.62	53.86
KY	4.30	3.41	3.05	2.79	3.81	3.69	44.99
CINCINNATI	1.38	1.50	4.87	4.51	2.29	4.90	45.75
OH	3.75	3.79	2.82	2.96	3.46	3.28	41.42

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Editor - Anita Nance

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